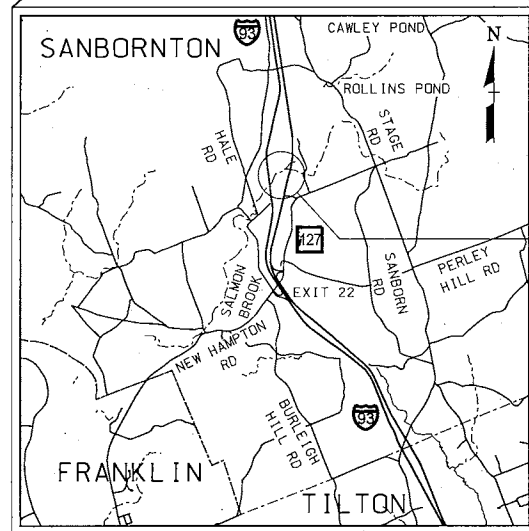
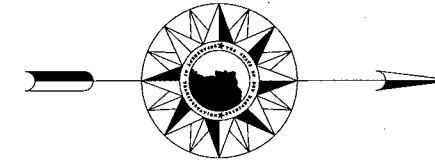


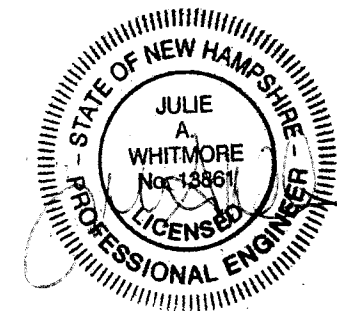
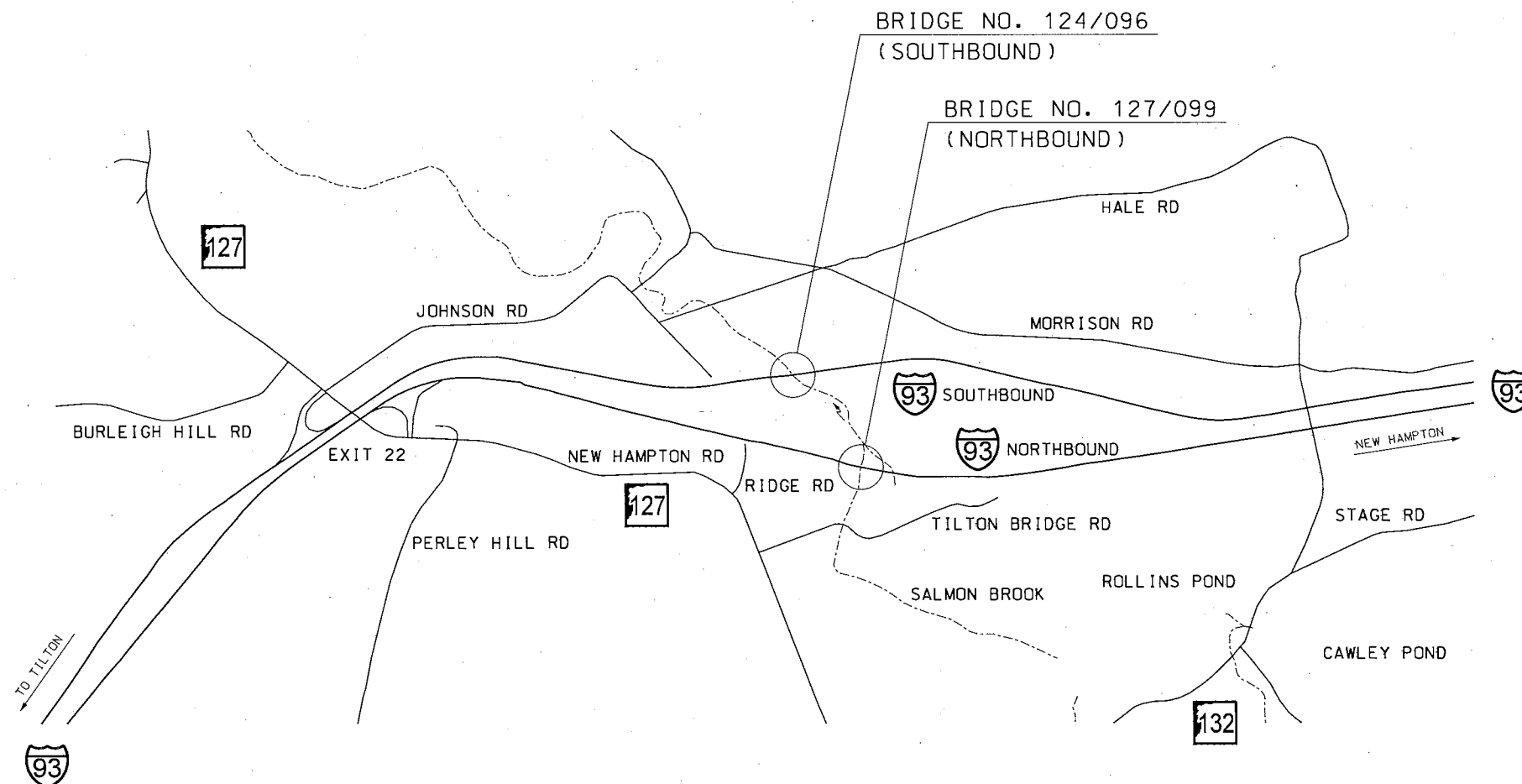
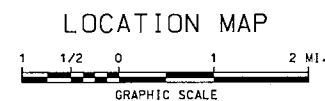
STATE OF NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION  
**WETLAND PLANS**

NH PROJECT NO. 16154  
I-93 NB AND SB OVER SALMON BROOK



STATE PROJECT 16154

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	STANDARD SYMBOLS
4	EROSION CONTROL STRATEGIES
5-7	ACCESS AND EROSION CONTROL PLANS
8	WETLAND IMPACT SUMMARY



**TOWN OF SANBORNTON**  
COUNTY OF BELKNAP  
SCALE: 1"= 1000'



NH DOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION			
FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
X-A001(158)	16154	1	8

DRAWN BY KDW DATE 6/29/2017  
CHECKED BY KCD DATE 6/29/2017

GENERAL

EDGE OF PAVEMENT  
TRAVELED WAY

PROPOSED ROADWAY  
existing roadway  
(pavement removed outside slope lines)

DRIVEWAYS  
(label surface type)

BUILDINGS  
(label house or type of building)  
(building to be removed)

FOUNDATION  
(label type)

LEACH FIELD  
leach field

BRIDGE CROSSINGS  
STREAM  
OVERPASS

STEPS AND WALK  
(label type)

INTERMITTENT WATER COURSE

SHORE LINE  
river/stream  
pond (label name of water body)

POTENTIAL WET AREA SYMBOL

BRUSH OR WOODS LINE

TREES (PLANS)  
(deciduous)(coniferous)(stump)  
(show station, circumference in feet & type)

TREE OR STUMP (CROSS-SECTIONS)

HEDGE  
(label type)

MONITORING WELL  
mon W

WELL  
W

FLAG POLE  
fp

ORIGINAL GROUND (TYPICALS)

ROCK OUTCROP

ROCK LINE (TYPICALS & SECTIONS ONLY)

GUARDRAIL (label type)

JERSEY BARRIER

CURB (LABEL TYPE)

STONE WALL

RETAINING WALL (LABEL TYPE)

FENCE (LABEL TYPE)

SIGNS  
(single post)  
(double post)

GAS PUMP  
gp

FUEL TANK (ABOVE GROUND)  
ft (label size & type)

STORAGE TANK FILLER CAP  
fc

SEPTIC TANK  
S

GRAVE  
gr

MAILBOX  
mb

VENT PIPE  
vp

SATELLITE DISH ANTENNA  
da

PHONE  
ph

GROUND LIGHT/LAMP POST  
gl lp

BORING LOCATION  
B

TEST PIT  
TP

INTERSTATE NUMBERED HIGHWAY  
293

UNITED STATES NUMBERED HIGHWAY  
3

STATE NUMBERED HIGHWAY  
102

SHORELAND - WETLAND

WETLAND DESIGNATION AND TYPE

DELINEATED WETLAND  
ORDINARY HIGH WATER  
TOP OF BANK  
TOP OF BANK & ORDINARY HIGH WATER  
NORMAL HIGH WATER  
WIDTH AT BANK FULL  
PRIME WETLAND  
PRIME WETLAND 100' BUFFER  
NON-JURISDICTIONAL DRAINAGE AREA  
COWARDIN DISTINCTION LINE  
TIDAL BUFFER ZONE  
DEVELOPED TIDAL BUFFER ZONE  
HIGHEST OBSERVABLE TIDE LINE  
MEAN HIGH WATER  
MEAN LOW WATER  
VERNAL POOL  
SPECIAL AQUATIC SITE  
REFERENCE LINE  
WATER FRONT BUFFER  
NATURAL WOODLAND BUFFER  
PROTECTED SHORELAND  
INVASIVE SPECIES LABEL  
INVASIVE SPECIES

PUB2E  
D W  
O H W  
T O B  
T O B O H W  
N H W  
W B F  
P W E T  
P W E T 100  
N J D A  
C D L  
T B Z  
D T B Z  
H O T L  
M H W  
M L W  
V P  
S A S  
R E F  
W B 50  
N W B 150  
P S 250  
I . S .  
I N V

FLOODPLAIN / FLOODWAY

500 YEAR FLOODPLAIN BOUNDARY  
100 YEAR FLOODPLAIN BOUNDARY  
FLOODWAY

F P 500  
F P 100  
F W

ENGINEERING

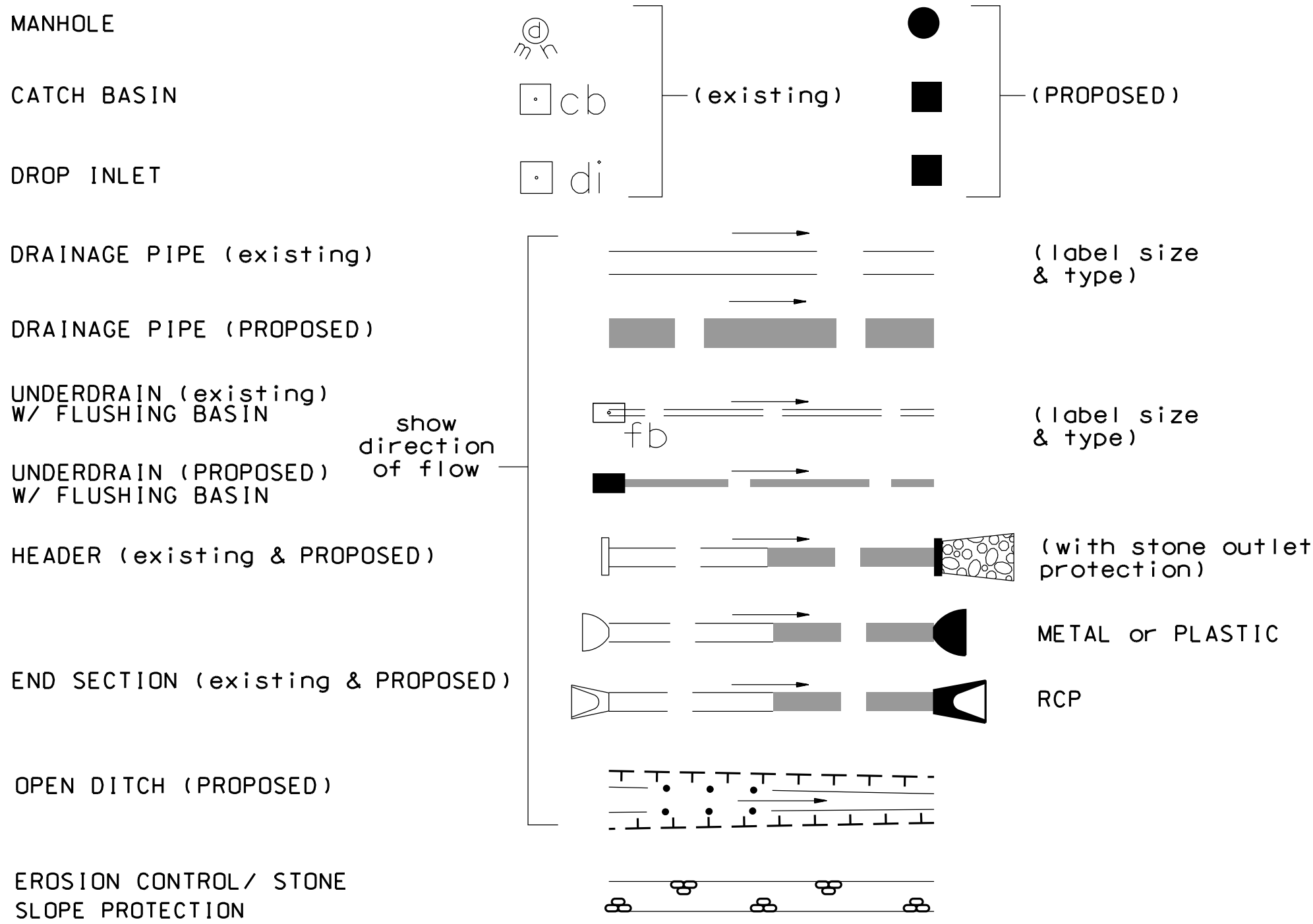
CONSTRUCTION BASELINE  
PC, PT, POT (ON CONST BASELINE)  
PI (IN CONSTRUCTION BASELINES)  
INTERSECTION OR EQUATION OF TWO LINES  
ORIGINAL GROUND LINE (PROFILES AND CROSS-SECTIONS)  
PROFILE GRADE LINE (PROFILES AND CROSS-SECTIONS)  
CLEARING LINE  
SLOPE LINE  
SLOPE LINE (FILL)  
SLOPE LINE (CUT)  
PROFILES AND CROSS SECTIONS:  
ORIGINAL GROUND ELEVATION (LEFT)  
FINISHED GRADE ELEVATION (RIGHT)

30 31 32  
1  
2  
SLOPE LINE  
CLEARING LINE  
12.5  
19.14

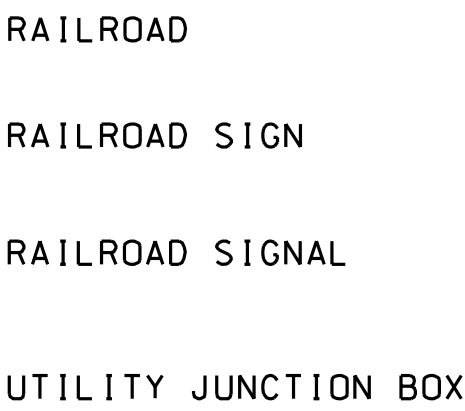
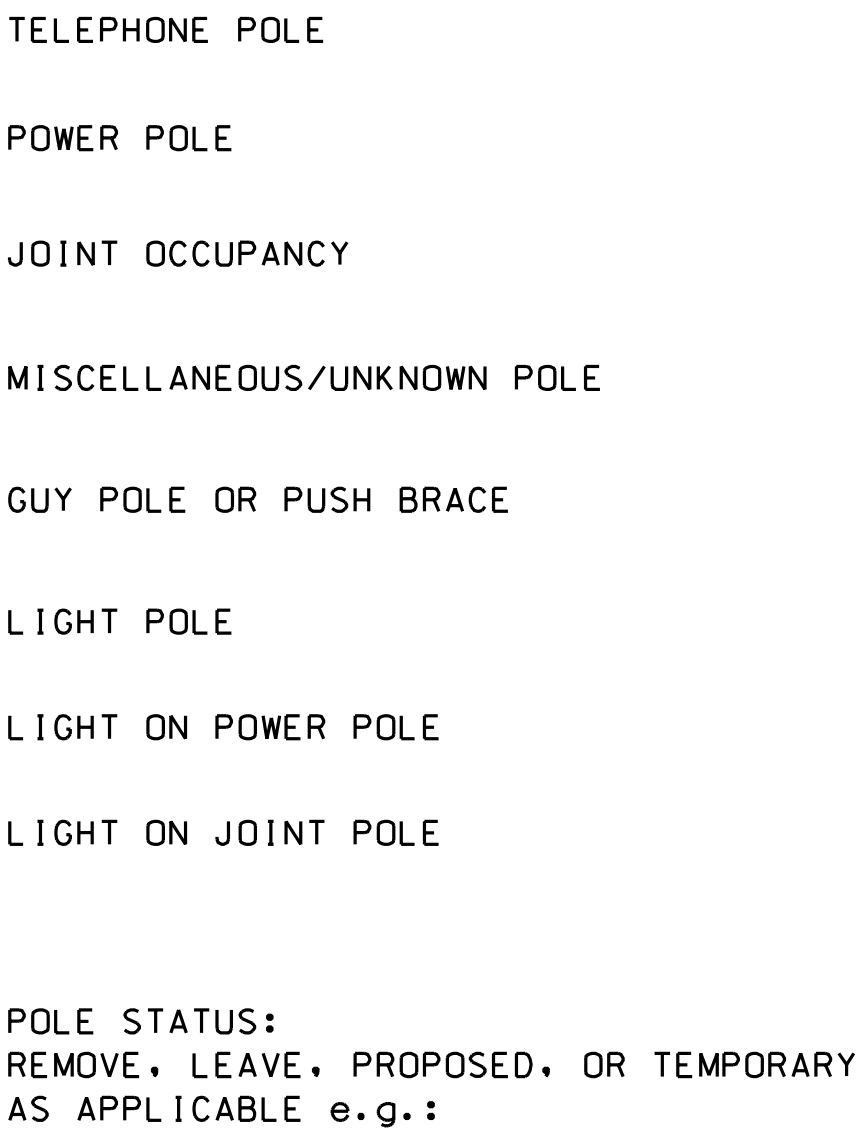
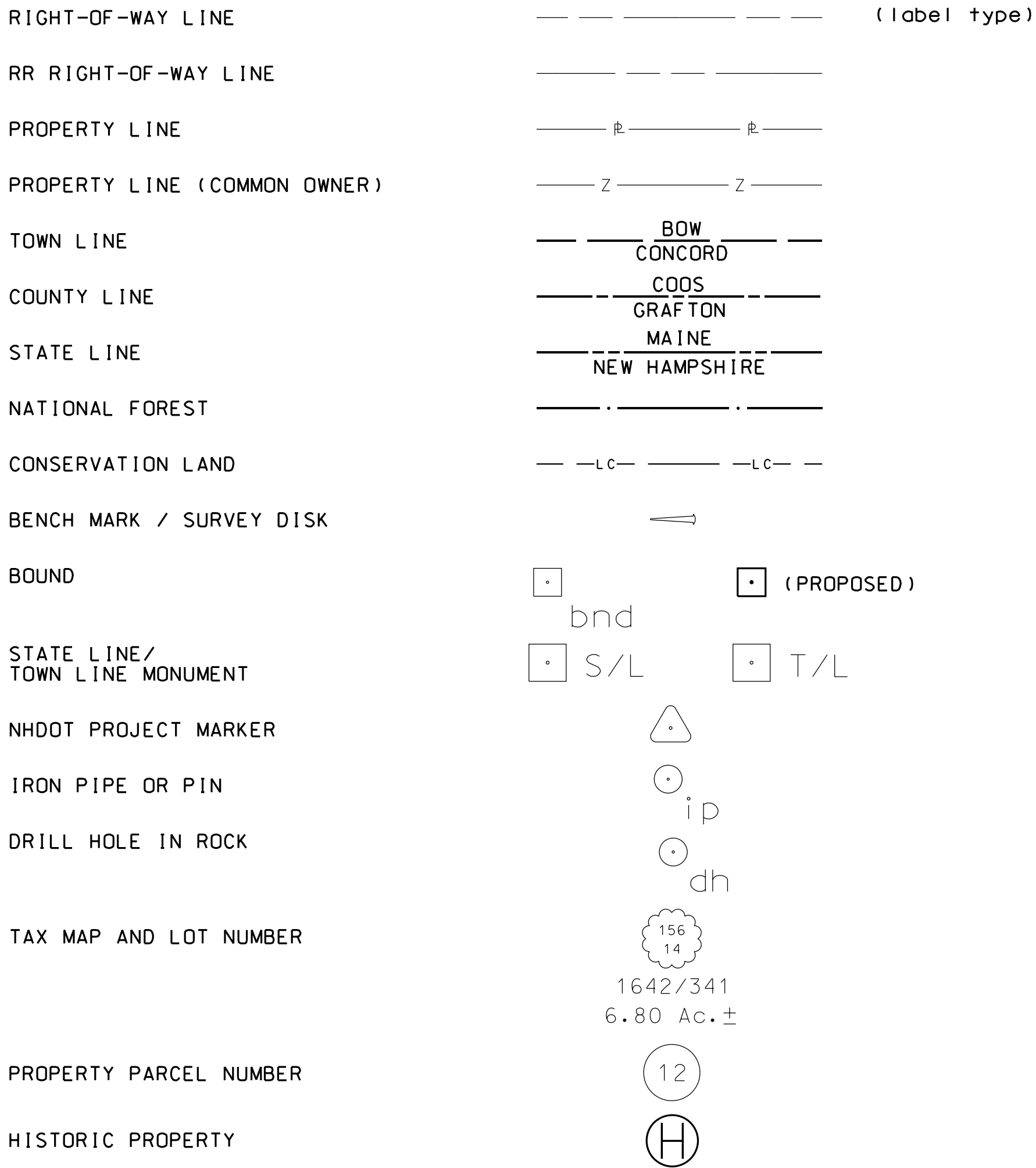
SHEET 1 OF 2

STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
STANDARD SYMBOLS				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-21-2014	STDSym.dgn	16154	2	8

DRAINAGE



BOUNDARIES / RIGHT-OF-WAY



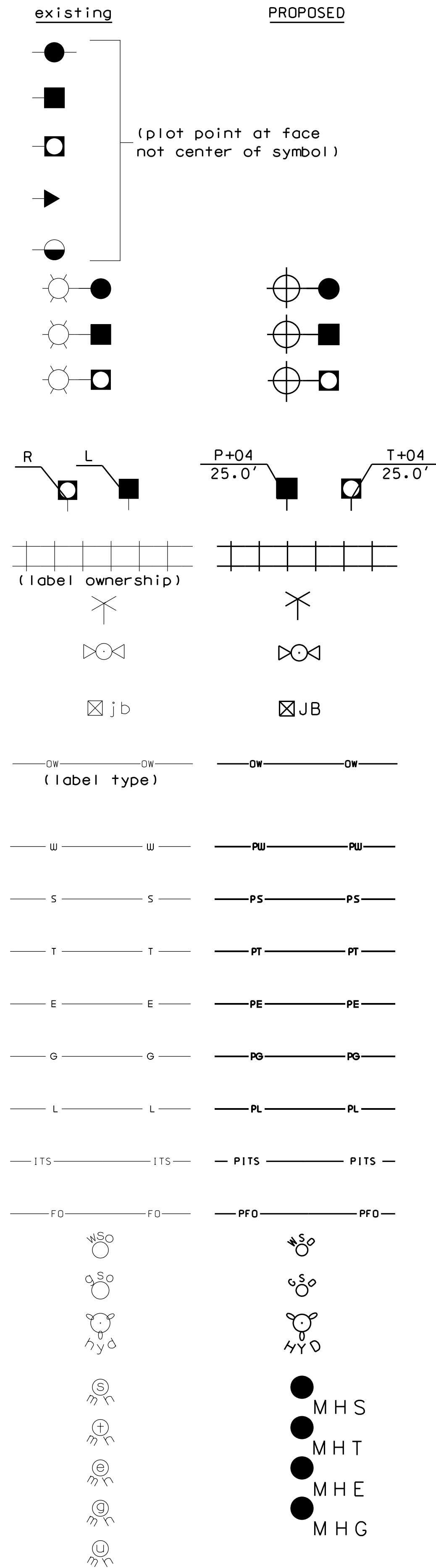
UNDERGROUND UTILITIES



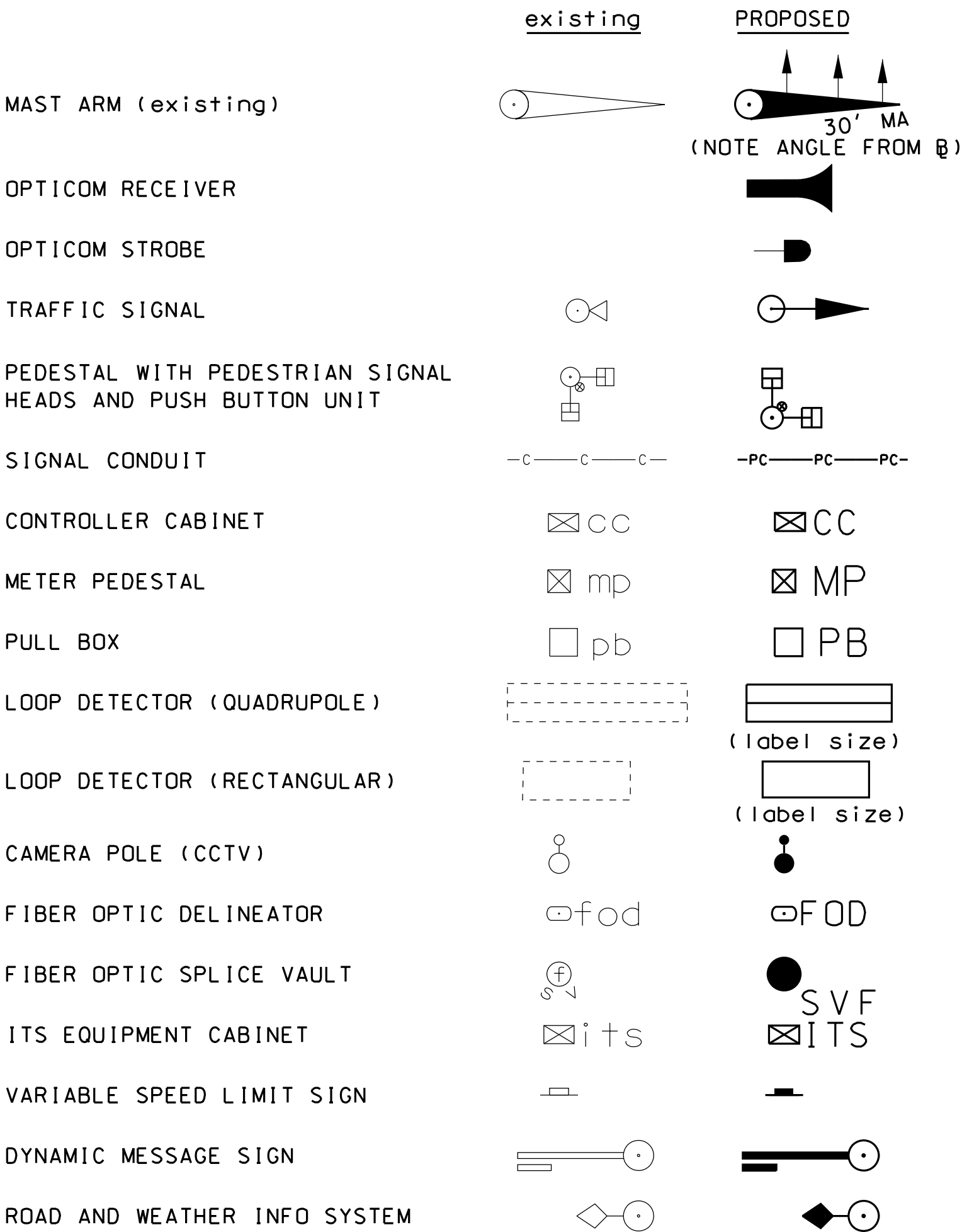
MANHOLES



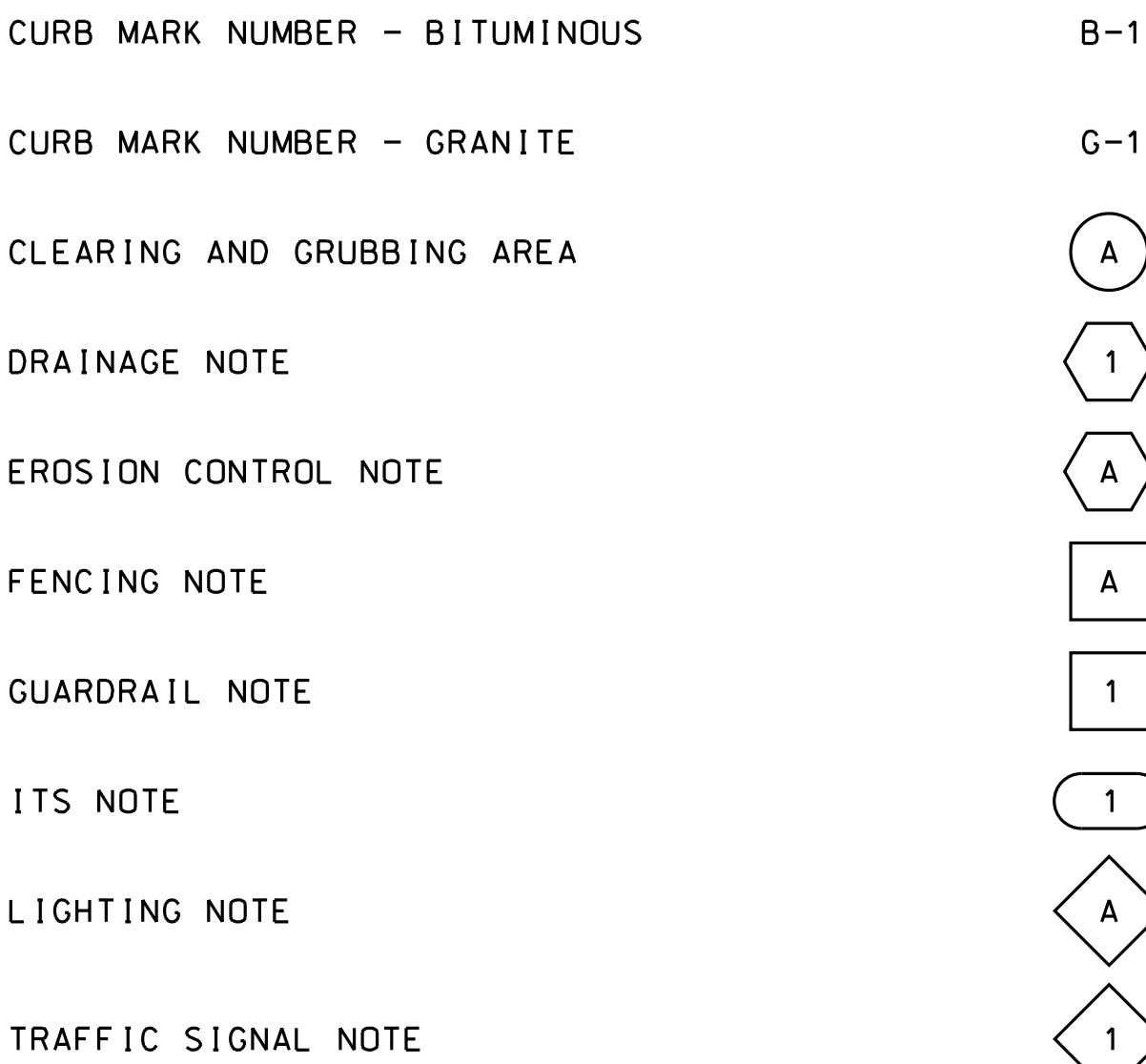
UTILITIES



TRAFFIC SIGNALS / ITS



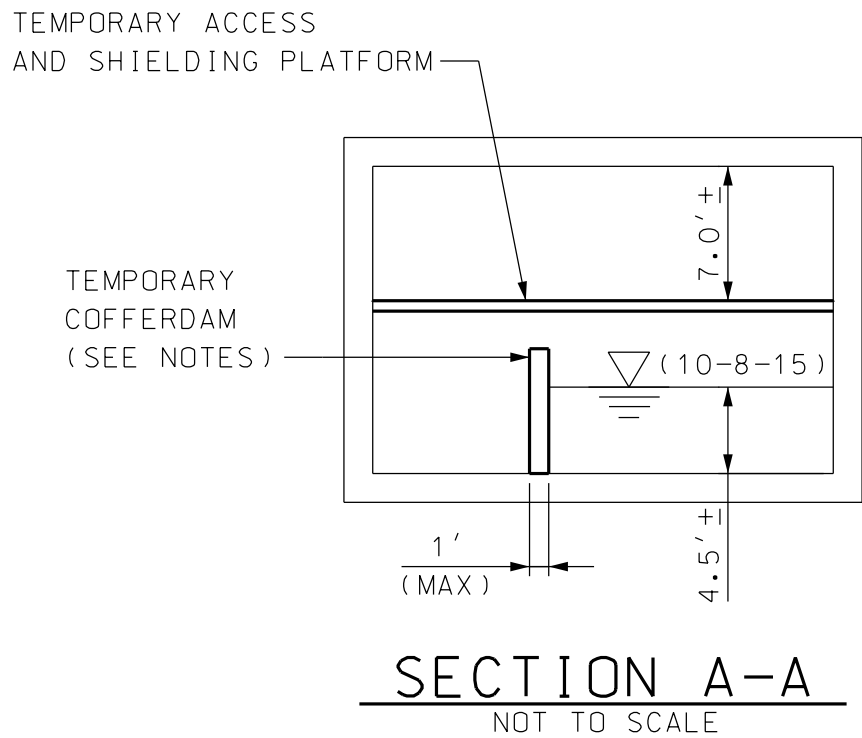
CONSTRUCTION NOTES



SHEET 2 OF 2

STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
STANDARD SYMBOLS				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
9-1-2016	STDSym.dgn	16154	3	8





NOTES

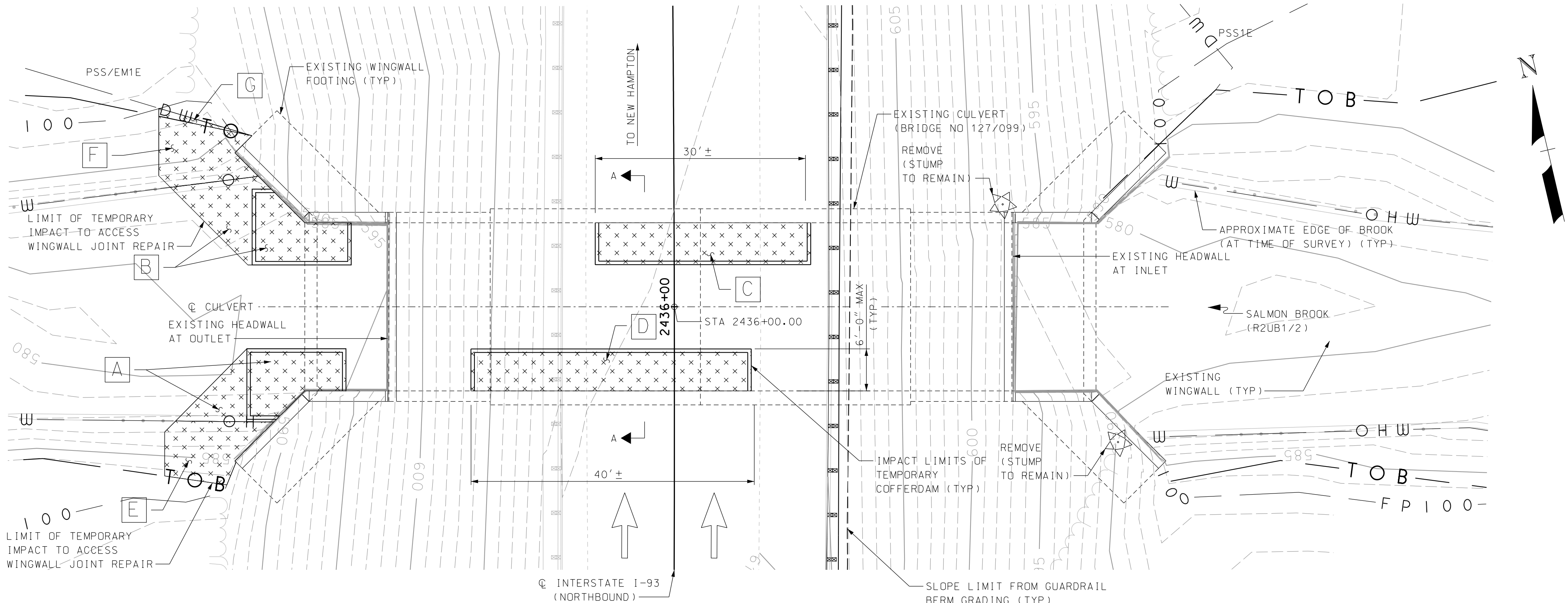
1. STREAM TOP OF BANK AND WETLANDS DELINEATED BY VHB WETLAND SCIENTIST, KRISTOPHER WILKES (CWS #288) ON NOVEMBER 13, 2015 IN ACCORDANCE WITH THE ENV-WT 101-07 AND RSA 483-B:4 (XI-e). PRIME WETLANDS ARE NOT LOCATED WITHIN THE VICINITY OF THE PROJECT.
2. 100-YEAR FLOODPLAIN FOR BRIDGE NO. 127/099 (NORTHBOUND BRIDGE) IS BASED ON INFORMATION PROVIDED IN 1978 EFFECTIVE FLOOD INSURANCE STUDY. ELEVATIONS RANGE FROM APPROXIMATELY 586.6 UPSTREAM TO APPROXIMATELY 586.3 DOWNSTREAM. NO INFORMATION IS AVAILABLE FOR BRIDGE NO. 124/096 (SOUTHBOUND BRIDGE).
3. THE PROPOSED WORK IS LIMITED TO REPAIR OF CONCRETE SURFACES INCLUDING CRACKS AND SPALL REPAIRS AND REPLACEMENT OF APPROXIMATELY 800 FEET OF GUARDRAIL. THE WORK WILL NOT INVOLVE GRADING OR CHANGES TO BRIDGE DIMENSIONS; THERE SHALL BE NO PERMANENT IMPACTS TO WETLANDS OR SALMON BROOK (BED OR BANKS).
4. TEMPORARY IMPACTS AT BRIDGE 127/099 (NORTHBOUND) ARE LIMITED TO PLACEMENT OF STAGED TEMPORARY COFFERDAMS TO ALLOW ACCESS TO PORTIONS OF THE BRIDGE BELOW ORDINARY HIGH WATER TO COMPLETE CONCRETE REPAIRS.
5. AT BRIDGE NO. 127/099 (NORTHBOUND), COFFERDAMS ON NORTH AND SOUTH SIDES SHALL NOT BE INSTALLED SIMULTANEOUSLY. THE COFFERDAMS SHALL BE LIMITED TO ONE SIDE AT A TIME TO MAXIMIZE CHANNEL FLOW AREA.
6. TEMPORARY BED IMPACTS FOR COFFERDAM AND ACCESS ARE NOT ANTICIPATED TO RESULT IN SEDIMENTATION WITHIN THE WATERWAY. HOWEVER, THE CONTRACTOR SHOULD EVALUATE THE POTENTIAL FOR SEDIMENTATION PRIOR TO INSTALLATION AND PLACE TURBIDITY CURTAIN(S) AROUND THE IMPACT AREAS, IF REQUIRED.
7. COFFERDAMS MAY BE DEWATERED BY PUMPING DIRECTLY INTO SALMON BROOK IF NOT TURBID. OTHERWISE, THE WATER SHALL BE TREATED OR DIVERTED TO CONTAINERS AND HAULED OFF-SITE FOR PROPER DISPOSAL.
8. SCAFFOLDING WORK SURFACES SHALL BE PLACED ABOVE WATER SURFACE WHEN CONDUCTING REPAIRS TO ROOF SLAB AND UPPER WALLS TO ELIMINATE RISK TO WATER QUALITY.
9. TEMPORARY IMPACTS AT BRIDGE 124/096 (SOUTHBOUND) ARE LIMITED TO THOSE NEEDED TO INSTALL LADDERS AND/OR TEMPORARY SCAFFOLD TO REPAIR SOFFITS AT THE BRIDGE ENDS. NO STRUCTURES SHALL BE PLACED THAT WILL IMPEDE CHANNEL FLOW. COFFERDAMS ARE NOT REQUIRED TO COMPLETE REPAIRS AT BRIDGE 124/096.

WETLAND IMPACT SUMMARY				
WETLAND	WETLAND CLASSIFICATION	LOCATION	AREA	LENGTH
			TEMPORARY IMPACTS	TEMPORARY IMPACTS
			SF	LF
SALMON BROOK	R2UB1/2	A	166	25
SALMON BROOK	R2UB1/2	B	190	25
SALMON BROOK	R2UB1/2	C	184	30
SALMON BROOK	R2UB1/2	D	240	40
SALMON BROOK	BANK	E	100	15
SALMON BROOK	BANK	F	102	14
	PSS/EM1E	G	8	
SALMON BROOK	R2UB1/2	H	140	25
SALMON BROOK	R2UB1/2	I	77	25
SALMON BROOK	BANK	J	163	18
SALMON BROOK	BANK	K	245	33
TOTAL			1615	250

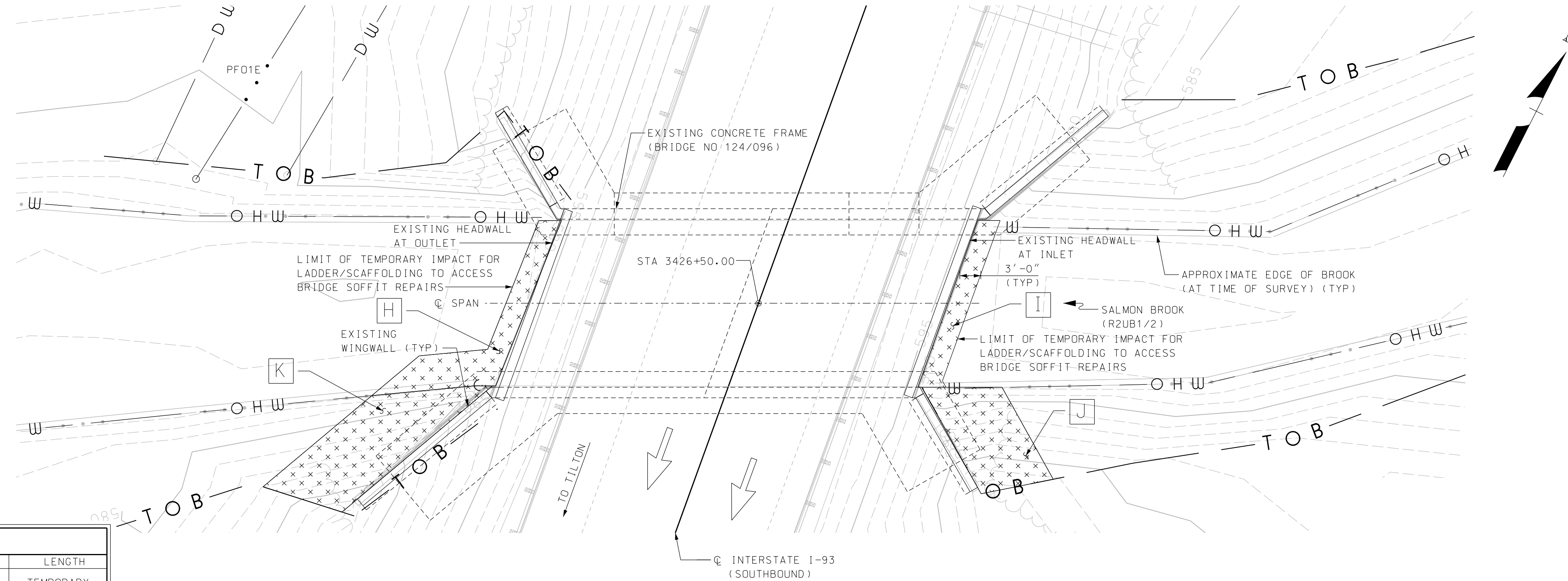
LEGEND

- [X] = WETLAND IMPACT LOCATION
- [X X X] = TEMPORARY IMPACT
- R2UB1/2 = RIVERINE LOWER PERRENIAL UNCONSOLIDATED BOTTOM COBBLE - GRAVEL/SAND
- PF01E = PALUSTRINE FORESTED BROAD-LEAVED DECIDUOUS SEASONALLY FLOODED/SATURATED
- PSS1E = PALUSTRINE SCRUB-SHRUB BROAD-LEAVED DECIDUOUS SEASONALLY FLOODED/SATURATED
- PSS/EM1E = PALUSTRINE SCRUB-SHRUB BROAD-LEAVED DECIDUOUS/PALUSTRINE EMERGENT PERSISTENT SEASONALLY FLOODED/SATURATED

BRIDGE NO. 127/099 PLAN



BRIDGE NO. 124/096 PLAN



PLOT DATE	DRAWING NAME	SHEET SCALE
6/29/2017	Wet_WetImp.dgn	AS NOTED

STATE OF NEW HAMPSHIRE										
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN										
TOWN SANBORNTON			BRIDGE NO. 127/099				STATE PROJECT 16154			
LOCATION I-93 OVER SALMON BROOK										
WETLAND IMPACT SUMMARY										BRIDGE SHEET
REVISIONS AFTER PROPOSAL			BY		DATE		BY		DATE	
			DESIGNED		JAW 06/17		CHECKED		SMH 06/17	
			DRAWN		JAR 06/17		CHECKED		JAR 06/17	
			QUANTITIES				CHECKED			
			ISSUE DATE			FEDERAL PROJECT NO.			SHEET NO.	
			REV. DATE						8	
									8	





EROSION CONTROL STRATEGIES

1. ENVIRONMENTAL COMMITMENTS:

1.1. THESE GUIDELINES DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH ANY CONTRACT PROVISIONS, OR APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

1.2. THIS PROJECT WILL BE SUBJECT TO THE US EPA’S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER CONSTRUCTION GENERAL PERMIT AS ADMINISTERED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THIS PROJECT IS SUBJECT TO REQUIREMENTS IN THE MOST RECENT CONSTRUCTION GENERAL PERMIT (CGP).

1.3. THE CONTRACTOR’S ATTENTION IS DIRECTED TO THE NHDES WETLAND PERMIT, THE US ARMY CORPS OF ENGINEERS PERMIT, WATER QUALITY CERTIFICATION AND THE SPECIAL ATTENTION ITEMS INCLUDED IN THE CONTRACT DOCUMENTS.

1.4. ALL STORM WATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION (DECEMBER 2008) (BMP MANUAL) AVAILABLE FROM THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES).

1.5. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17, AND ALL, PUBLISHED NHDES ALTERATION OF TERRAIN ENV-WQ 1500 REQUIREMENTS (HTTP://DES.NH.GOV/ORGANIZATION/COMMISSIONER/LEGAL/RULES/INDEX.HTM)

1.6. THE CONTRACTOR IS DIRECTED TO REVIEW AND COMPLY WITH SECTION 107.1 OF THE CONTRACT AS IT REFERS TO SPILLAGE, AND ALSO WITH REGARDS TO EROSION, POLLUTION, AND TURBIDITY PRECAUTIONS.
2. STANDARD EROSION CONTROL SEQUENCING APPLICABLE TO ALL CONSTRUCTION PROJECTS:

2.1. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES. PERIMETER CONTROLS AND STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AS SHOWN IN THE BMP MANUAL AND AS DIRECTED BY THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARER.

2.2. EROSION, SEDIMENTATION CONTROL MEASURES AND INFILTRATION BASINS SHALL BE CLEANED, REPLACED AND AUGMENTED AS NECESSARY TO PREVENT SEDIMENTATION BEYOND PROJECT LIMITS THROUGHOUT THE PROJECT DURATION.

2.3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT AND SECTION 645 OF THE NHDOT SPECIFICATIONS FOR ROAD AND BRIDGES CONSTRUCTION.

2.4. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

(A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;

(B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;

(C) A MINIMUM OF 3” OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED;

(D) TEMPORARY SLOPE STABILIZATION CONFORMING TO TABLE 1 HAS BEEN PROPERLY INSTALLED

2.5. ALL STOCKPILES SHALL BE CONTAINED WITH A PERIMETER CONTROL. IF THE STOCKPILE IS TO REMAIN UNDISTURBED FOR MORE THAN 14 DAYS, MULCHING WILL BE REQUIRED.

2.6. A WATER TRUCK SHALL BE AVAILABLE TO CONTROL EXCESSIVE DUST AT THE DIRECTION OF THE CONTRACT ADMINISTRATOR.

2.7. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN UNTIL THE AREA HAS BEEN PERMANENTLY STABILIZED.

2.8. CONSTRUCTION PERFORMED ANY TIME BETWEEN NOVEMBER 30<sup>th</sup> AND MAY 1<sup>st</sup> OF ANY YEAR SHALL BE CONSIDERED WINTER CONSTRUCTION AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.

(A) ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15<sup>th</sup>, OR WHICH ARE DISTURBED AFTER OCTOBER 15<sup>th</sup>, SHALL BE STABILIZED IN ACCORDANCE WITH TABLE 1.

(B) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15<sup>th</sup>, OR WHICH ARE DISTURBED AFTER OCTOBER 15<sup>th</sup>, SHALL BE STABILIZED TEMPORARILY WITH STONE OR IN ACCORDANCE WITH TABLE 1.

(C) AFTER NOVEMBER 30<sup>th</sup> INCOMPLETE ROAD SURFACES, WHERE WORK HAS STOPPED FOR THE SEASON, SHALL BE PROTECTED IN ACCORDANCE WITH TABLE 1.

(D) WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE PROJECT IS WITHOUT STABILIZATION AT ONE TIME, UNLESS A WINTER CONSTRUCTION PLAN HAS BEEN APPROVED BY NHDOT THAT MEETS THE REQUIREMENTS OF ENV-WQ 1505.02 AND ENV-WQ 1505.05.

(E) A SWPPP AMENDMENT SHALL BE SUBMITTED TO THE DEPARTMENT, FOR APPROVAL, ADDRESSING COLD WEATHER STABILIZATION (ENV-WQ 1505.05) AND INCLUDING THE REQUIREMENTS OF NO LESS THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK SCHEDULED AFTER NOVEMBER 30<sup>th</sup>.

GENERAL CONSTRUCTION PLANNING AND SELECTION OF STRATEGIES TO CONTROL EROSION AND SEDIMENT ON HIGHWAY CONSTRUCTION PROJECTS

3. PLAN ACTIVITIES TO ACCOUNT FOR SENSITIVE SITE CONDITIONS:

3.1. CLEARLY FLAG AREAS TO BE PROTECTED IN THE FIELD AND PROVIDE CONSTRUCTION BARRIERS TO PREVENT TRAFFICKING OUTSIDE OF WORK AREAS.

3.2. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS.

3.3. PROTECT AND MAXIMIZE EXISTING NATIVE VEGETATION AND NATURAL FOREST BUFFERS BETWEEN CONSTRUCTION ACTIVITY AND SENSITIVE AREAS.

3.4. WHEN WORK IS PERFORMED IN AND NEAR WATER COURSES, STREAM FLOW DIVERSION METHODS SHALL BE IMPLEMENTED PRIOR TO ANY EXCAVATION OR FILLING.

3.5. WHEN WORK IS PERFORMED WITHIN 50 FEET OF SURFACE WATERS (WETLAND, OPEN WATER OR FLOWING WATER), PERIMETER CONTROL SHALL BE ENHANCED CONSISTENT WITH SECTION 2.1.2.1. OF THE 2012 NPDES CONSTRUCTION GENERAL PERMIT.

4. MINIMIZE THE AMOUNT OF EXPOSED SOIL:

4.1. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS. MINIMIZE THE AREA OF EXPOSED SOIL AT ANY ONE TIME. PHASING SHALL BE USED TO REDUCE THE AMOUNT AND DURATION OF SOIL EXPOSED TO THE ELEMENTS AND VEHICLE TRACKING.

4.2. UTILIZE TEMPORARY MULCHING OR PROVIDE ALTERNATE TEMPORARY STABILIZATION ON EXPOSED SOILS IN ACCORDANCE WITH TABLE 1.

4.3. THE MAXIMUM AMOUNT OF DISTURBED EARTH SHALL NOT EXCEED A TOTAL OF 5 ACRES FROM MAY 1<sup>st</sup> THROUGH NOVEMBER 30<sup>th</sup>, OR EXCEED ONE ACRE DURING WINTER MONTHS, UNLESS THE CONTRACTOR DEMONSTRATES TO THE DEPARTMENT THAT THE ADDITIONAL AREA OF DISTURBANCE IS NECESSARY TO MEET THE CONTRACTORS CRITICAL PATH METHOD SCHEDULE (CPM), AND THE CONTRACTOR HAS ADEQUATE RESOURCES AVAILABLE TO ENSURE THAT ENVIRONMENTAL COMMITMENTS WILL BE MET.

5. CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT:

5.1. DIVERT OFF SITE RUNOFF OR CLEAN WATER AWAY FROM THE CONSTRUCTION ACTIVITY TO REDUCE THE VOLUME THAT NEEDS TO BE TREATED ON SITE.

5.2. DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM DISTURBED AREAS, SLOPES, AND AROUND ACTIVE WORK AREAS AND TO A STABILIZED OUTLET LOCATION.

5.3. CONSTRUCT IMPERMEABLE BARRIERS AS NECESSARY TO COLLECT OR DIVERT CONCENTRATED FLOWS FROM WORK OR DISTURBED AREAS.

5.4. STABILIZE, TO APPROPRIATE ANTICIPATED VELOCITIES, CONVEYANCE CHANNELS OR PUMPING SYSTEMS NEEDED TO CONVEY CONSTRUCTION STORMWATER TO BASINS AND DISCHARGE LOCATIONS PRIOR TO USE.

5.5. DIVERT OFF-SITE WATER THROUGH THE PROJECT IN AN APPROPRIATE MANNER SO NOT TO DISTURB THE UPSTREAM OR DOWNSTREAM SOILS, VEGETATION OR HYDROLOGY BEYOND THE PERMITTED AREA.

6. PROTECT SLOPES:

6.1. INTERCEPT AND DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM UNPROTECTED AND NEWLY ESTABLISHED AREAS AND SLOPES TO A STABILIZED OUTLET OR CONVEYANCE.

6.2. CONSIDER HOW GROUNDWATER SEEPAGE ON CUT SLOPES MAY IMPACT SLOPE STABILITY AND INCORPORATE APPROPRIATE MEASURES TO MINIMIZE EROSION.

6.3. CONVEY STORMWATER DOWN THE SLOPE IN A STABILIZED CHANNEL OR SLOPE DRAIN.

6.4. THE OUTER FACE OF THE FILL SLOPE SHOULD BE IN A LOOSE RUFFLED CONDITION PRIOR TO TURF ESTABLISHMENT. TOPSOIL OR HUMUS LAYERS SHALL BE TRACKED UP AND DOWN THE SLOPE, DISKED, HARROWED, DRAGGED WITH A CHAIN OR MAT, MACHINE-RAKED, OR HAND-WORKED TO PRODUCE A RUFFLED SURFACE.

7. ESTABLISH STABILIZED CONSTRUCTION EXITS:

7.1. INSTALL AND MAINTAIN CONSTRUCTION EXITS, ANYWHERE TRAFFIC LEAVES A CONSTRUCTION SITE ONTO A PUBLIC RIGHT-OF-WAY.

7.2. SWEEP ALL CONSTRUCTION RELATED DEBRIS AND SOIL FROM THE ADJACENT PAVED ROADWAYS AS NECESSARY.

8. PROTECT STORM DRAIN INLETS:

8.1. DIVERT SEDIMENT LADEN WATER AWAY FROM INLET STRUCTURES TO THE EXTENT POSSIBLE.

8.2. INSTALL SEDIMENT BARRIERS AND SEDIMENT TRAPS AT INLETS TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.

8.3. CLEAN CATCH BASINS, DRAINAGE PIPES, AND CULVERTS IF SIGNIFICANT SEDIMENT IS DEPOSITED.

8.4. DROP INLET SEDIMENT BARRIERS SHOULD NEVER BE USED AS THE PRIMARY MEANS OF SEDIMENT CONTROL AND SHOULD ONLY BE USED TO PROVIDE AN ADDITIONAL LEVEL OF PROTECTION TO STRUCTURES AND DOWN-GRADIENT SENSITIVE RECEPTORS.

9. SOIL STABILIZATION:

9.1. WITHIN THREE DAYS OF THE LAST ACTIVITY IN AN AREA, ALL EXPOSED SOIL AREAS, WHERE CONSTRUCTION ACTIVITIES ARE COMPLETE, SHALL BE STABILIZED.

9.2. IN ALL AREAS, TEMPORARY SOIL STABILIZATION MEASURES SHALL BE APPLIED IN ACCORDANCE WITH THE STABILIZATION REQUIREMENTS (SECTION 2.2) OF THE 2012 CGP. (SEE TABLE 1 FOR GUIDANCE ON THE SELECTION OF TEMPORARY SOIL STABILIZATION MEASURES.)

9.3. EROSION CONTROL SEED MIX SHALL BE SOWN IN ALL INACTIVE CONSTRUCTION AREAS THAT WILL NOT BE PERMANENTLY SEEDED WITHIN TWO WEEKS OF DISTURBANCE AND PRIOR TO SEPTEMBER 15, OF ANY GIVEN YEAR, IN ORDER TO ACHIEVE VEGETATIVE STABILIZATION PRIOR TO THE END OF THE GROWING SEASON.

9.4. SOIL TACKIFIERS MAY BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER’S SPECIFICATIONS AND REAPPLIED AS NECESSARY TO MINIMIZE SOIL AND MULCH LOSS UNTIL PERMANENT VEGETATION IS ESTABLISHED.

10. RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES:

10.1. TEMPORARY SEDIMENT BASINS (CGP-SECTION 2.1.3.2) OR SEDIMENT TRAPS (ENV-WQ 1506.10) SHALL BE SIZED TO RETAIN, ON SITE, THE VOLUME OF A 2-YEAR 24-HOUR STORM EVENT FOR ANY AREA OF DISTURBANCE OR 3,600 CUBIC FEET OF STORMWATER RUNOFF PER ACRE OF DISTURBANCE, WHICHEVER IS GREATER. TEMPORARY SEDIMENT BASINS USED TO TREAT STORMWATER RUNOFF FROM AREAS GREATER THAN 5-ACRES OF DISTURBANCE SHALL BE SIZED TO ALSO CONTROL STORMWATER RUNOFF FROM A 10-YEAR 24 HOUR STORM EVENT. ON-SITE RETENTION OF THE 10-YEAR 24-HOUR EVENT IS NOT REQUIRED.

10.2. CONSTRUCT AND STABILIZE DEWATERING INFILTRATION BASINS PRIOR TO ANY EXCAVATION THAT MAY REQUIRE DEWATERING.

10.3. TEMPORARY SEDIMENT BASINS OR TRAPS SHALL BE PLACED AND STABILIZED AT LOCATIONS WHERE CONCENTRATED FLOW (CHANNELS AND PIPES) DISCHARGE TO THE SURROUNDING ENVIRONMENT FROM AREAS OF UNSTABILIZED EARTH DISTURBING ACTIVITIES.

11. ADDITIONAL EROSION AND SEDIMENT CONTROL GENERAL PRACTICES:

11.1. USE TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, AND PERMANENT VEGETATIVE COVER TO REDUCE THE NEED FOR DUST CONTROL. USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BUILDUP. APPLY WATER, OR OTHER DUST INHIBITING AGENTS OR TACKIFIERS, AS APPROVED BY THE NHDES.

11.2. ALL STOCKPILES SHALL BE CONTAINED WITH TEMPORARY PERIMETER CONTROLS. INACTIVE SOIL STOCKPILES SHOULD BE PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY EROSION CONTROL SEED MIX AND MULCH, SOIL BINDER) OR COVERED WITH ANCHORED TARPS.

11.3. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED IN ACCORDANCE WITH SECTION 645 OF NHDOT SPECIFICATIONS, WEEKLY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.25 IN. OF RAIN PER 24-HOUR PERIOD. EROSION AND SEDIMENT CONTROL MEASURES WILL ALSO BE INSPECTED IN ACCORDANCE WITH THE GUIDANCE MEMO FROM THE NHDES CONTAINED WITHIN THE CONTRACT PROPOSAL AND THE EPA CONSTRUCTION GENERAL PERMIT.

11.4. THE CONTRACTOR SHOULD UTILIZE STORM DRAIN INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING A STORM DRAINAGE SYSTEM PRIOR TO THE PERMANENT STABILIZATION OF THE CONTRIBUTING DISTURBED AREA.

11.5. PERMANENT STABILIZATION MEASURES WILL BE CONSTRUCTED AND MAINTAINED IN LOCATIONS AS SHOWN ON THE CONSTRUCTION PLANS TO STABILIZE AREAS. VEGETATIVE STABILIZATION SHALL NOT BE CONSIDERED PERMANENTLY STABILIZED UNTIL VEGETATIVE GROWTH COVERS AT LEAST 85% OF THE DISTURBED AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL FOR ONE YEAR AFTER PROJECT COMPLETION.

11.6. CATCH BASINS: CARE SHALL BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT ENTER ANY EXISTING CATCH BASINS DURING CONSTRUCTION. THE CONTRACTOR SHALL PLACE TEMPORARY STONE INLET PROTECTION OVER INLETS IN AREAS OF SOIL DISTURBANCE THAT ARE SUBJECT TO SEDIMENT CONTAMINATION.

11.7. TEMPORARY AND PERMANENT DITCHES SHALL BE CONSTRUCTED, STABILIZED AND MAINTAINED IN A MANNER THAT WILL MINIMIZE SCOUR. TEMPORARY AND PERMANENT DITCHES SHALL BE DIRECTED TO DRAIN TO SEDIMENT BASINS OR STORM WATER COLLECTION AREAS.

11.8. WINTER EXCAVATION AND EARTHWORK ACTIVITIES NEED TO BE LIMITED IN EXTENT AND DURATION, TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS. THE AREA OF EXPOSED SOIL SHALL BE LIMITED TO ONE ACRE, OR THAT WHICH CAN BE STABILIZED AT THE END OF EACH DAY UNLESS A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY THE DEPARTMENT.

11.9. CHANNEL PROTECTION MEASURES SHALL BE SUPPLEMENTED WITH PERIMETER CONTROL MEASURES WHEN THE DITCH LINES OCCUR AT THE BOTTOM OF LONG FILL SLOPES. THE PERIMETER CONTROLS SHALL BE INSTALLED ON THE FILL SLOPE TO MINIMIZE THE POTENTIAL FOR FILL SLOPE SEDIMENT DEPOSITS IN THE DITCH LINE.

BEST MANAGEMENT PRACTICES (BMP) BASED ON AMOUNT OF OPEN CONSTRUCTION AREA

12. STRATEGIES SPECIFIC TO OPEN AREAS LESS THAN 5 ACRES:

12.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500: ALTERATION OF TERRAIN FOR CONSTRUCTION AND USE ALL CONVENTIONAL BMP STRATEGIES.

12.2. SLOPES STEEPER THAN 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING.

12.3. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT ALONE.

12.4. AREAS WHERE HAUL ROADS ARE CONSTRUCTED AND STORMWATER CANNOT BE TREATED THE DEPARTMENT WILL CONSIDER INFILTRATION.

12.5. FOR HAUL ROADS ADJACENT TO SENSITIVE ENVIRONMENTAL AREAS OR STEEPER THAN 5%, THE DEPARTMENT WILL CONSIDER USING EROSION STONE, CRUSHED GRAVEL, OR CRUSHED STONE BASE TO HELP MINIMIZE EROSION ISSUES.

12.6. ALL AREAS THAT CAN BE STABILIZED SHALL BE STABILIZED PRIOR TO OPENING UP NEW TERRITORY.

12.7. DETENTION BASINS SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE A 2 YEAR STORM EVENT.
13. STRATEGIES SPECIFIC TO OPEN AREAS BETWEEN 5 AND 10 ACRES:

13.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES WILL BE UTILIZED.

13.2. DETENTION BASINS WILL BE CONSTRUCTED TO ACCOMMODATE THE 2-YEAR 24-HOUR STORM EVENT AND CONTROL A 10-YEAR 24-HOUR STORM EVENT.

13.3. SLOPES STEEPER THAN A 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS. OTHER ALTERNATIVE MEASURES, SUCH AS BONDED FIBER MATRIXES (BFMS) OR FLEXIBLE GROWTH MEDIUMS (FGMS) MAY BE UTILIZED, IF MEETING THE NHDES APPROVALS AND REGULATIONS.

13.4. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS.
14. STRATEGIES SPECIFIC TO OPEN AREAS OVER 10 ACRES:

14.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES AND BETWEEN 5 AND 10 ACRES WILL BE UTILIZED.

14.2. THE DEPARTMENT ANTICIPATES THAT SOIL BINDERS WILL BE NEEDED ON ALL SLOPES STEEPER THAN 3:1, IN ORDER TO MINIMIZE EROSION AND REDUCE THE AMOUNT OF SEDIMENT IN THE STORMWATER TREATMENT BASINS.

14.3. THE CONTRACTOR WILL BE REQUIRED TO HAVE AN APPROVED DESIGN IN ACCORDANCE WITH ENV-WQ 1506.12 FOR AN ACTIVE FLOCCULANT TREATMENT SYSTEM TO TREAT AND RELEASE WATER CAPTURED IN STORM WATER BASINS. THE CONTRACTOR SHALL ALSO RETAIN THE SERVICES OF AN ENVIRONMENTAL CONSULTANT WHO HAS DEMONSTRATED EXPERIENCE IN THE DESIGN OF FLOCCULANT TREATMENT SYSTEMS. THE CONSULTANT WILL ALSO BE RESPONSIBLE FOR THE IMPLEMENTATION AND MONITORING OF THE SYSTEM.

TABLE 1  
GUIDANCE ON SELECTING TEMPORARY SOIL STABILIZATION MEASURES

APPLICATION AREAS	DRY MULCH METHODS				HYDRAULICALLY APPLIED MULCHES <sup>2</sup>				ROLLED EROSION CONTROL BLANKETS <sup>3</sup>			
	HMT	WC	SG	CB	HM	SMM	BFM	FRM	SNSB	DNSB	DNSCB	DNCB
SLOPES <sup>1</sup>												
STEEPER THAN 2:1	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES
2:1 SLOPE	YES <sup>1</sup>	YES <sup>1</sup>	YES	YES	NO	NO	YES	YES	NO	YES	YES	YES
3:1 SLOPE	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	NO
4:1 SLOPE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
WINTER STABILIZATION	4T/AC	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES
CHANNELS												
LOW FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
HIGH FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES

ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE
HMT	HAY MULCH & TACK	HM	HYDRAULIC MULCH	SNSB	SINGLE NET STRAW BLANKET
WC	WOOD CHIPS	SMM	STABILIZED MULCH MATRIX	DNSB	DOUBLE NET STRAW BLANKET
SG	STUMP GRINDINGS	BFM	BONDED FIBER MATRIX	DNSCB	2 NET STRAW-COCONUT BLANKET
CB	COMPOST BLANKET	FRM	FIBER REINFORCED MEDIUM	DNCB	2 NET COCONUT BLANKET

- NOTES:
1. ALL SLOPE STABILIZATION OPTIONS ASSUME A SLOPE LENGTH ≤10 TIMES THE HORIZONTAL DISTANCE COMPONENT OF THE SLOPE, IN FEET.
2. PRODUCTS CONTAINING POLYACRYLAMIDE (PAM) SHALL NOT BE APPLIED DIRECTLY TO OR WITHIN 100 FEET OF ANY SURFACE WATER WITHOUT PRIOR WRITTEN APPROVAL FROM THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
3. ALL EROSION CONTROL BLANKETS SHALL BE MADE WITH WILDLIFE FRIENDLY BIODEGRADABLE NETTING.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

EROSION CONTROL STRATEGIES

REVISION DATE

DGN

STATE PROJECT NO.

SHEET NO.

TOTAL SHEETS

2-2017, VHB REVISION TO SHEET NAME

12-21-2015

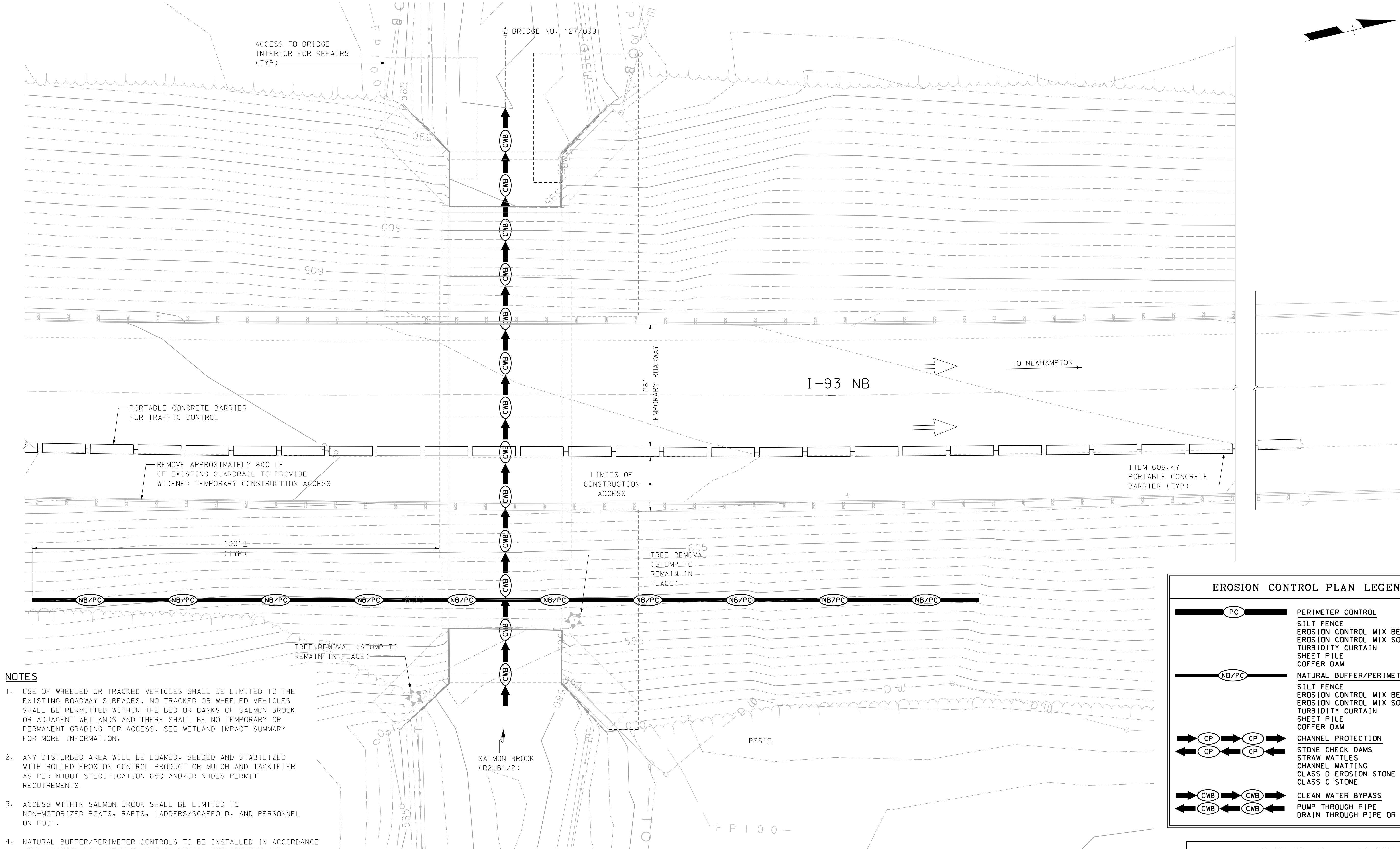
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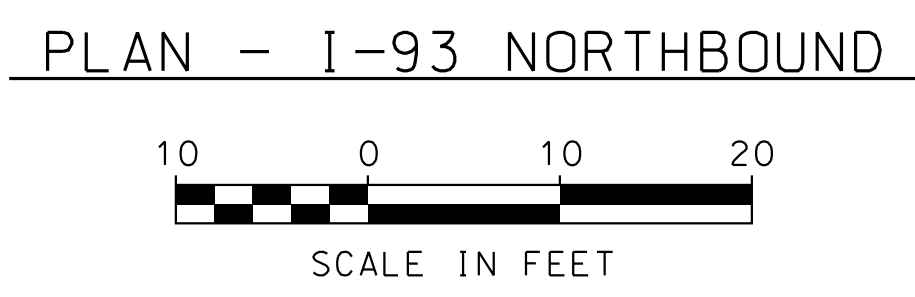
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SDR PROCESSED	KDW	DATE	06/17	REVISIONS AFTER PROPOSAL			
NEW DESIGN	KCD	DATE	06/17	NUMBER	DATE	STATION	DESCRIPTION
SHEET CHECKED	SMH	DATE	06/17				
AS BUILT DETAILS							



- NOTES**
1. USE OF WHEELED OR TRACKED VEHICLES SHALL BE LIMITED TO THE EXISTING ROADWAY SURFACES. NO TRACKED OR WHEELED VEHICLES SHALL BE PERMITTED WITHIN THE BED OR BANKS OF SALMON BROOK OR ADJACENT WETLANDS AND THERE SHALL BE NO TEMPORARY OR PERMANENT GRADING FOR ACCESS. SEE WETLAND IMPACT SUMMARY FOR MORE INFORMATION.
  2. ANY DISTURBED AREA WILL BE LOAMED, SEEDED AND STABILIZED WITH ROLLED EROSION CONTROL PRODUCT OR MULCH AND TACKIFIER AS PER NHDOT SPECIFICATION 650 AND/OR NHDES PERMIT REQUIREMENTS.
  3. ACCESS WITHIN SALMON BROOK SHALL BE LIMITED TO NON-MOTORIZED BOATS, RAFTS, LADDERS/SCAFFOLD, AND PERSONNEL ON FOOT.
  4. NATURAL BUFFER/PERIMETER CONTROLS TO BE INSTALLED IN ACCORDANCE WITH SECTION 645, BETWEEN THE GUARDRAIL REPLACEMENT AND JURISDICTIONAL AREAS.
  5. NATURAL BUFFER/PERIMETER CONTROLS CAN BE STAGGERED TO ALLOW FOR ACCESS NEAR THE BRIDGE WINGWALLS.
  6. TEMPORARY COFFERDAM SHALL BE IN PLACE PRIOR TO WORK ON CONCRETE SURFACES BELOW WATER SURFACE AT BRIDGE NO. 127/099. NO SUCH WORK IS ANTICIPATED AT BRIDGE NO. 124/096. SEE WETLAND IMPACT SUMMARY SHEET FOR COFFERDAM DETAILS.

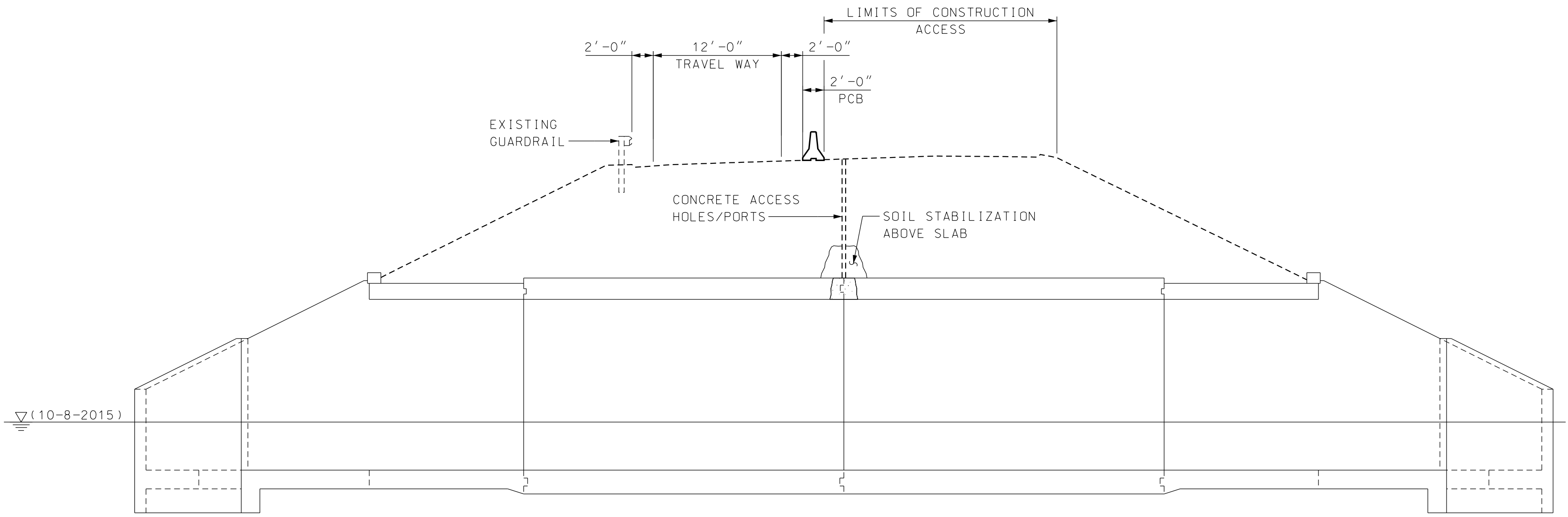


EROSION CONTROL PLAN LEGEND	
	<b>PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<b>NATURAL BUFFER/PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<b>CHANNEL PROTECTION</b> STONE CHECK DAMS STRAW WATTLES CHANNEL MATTING CLASS D EROSION STONE CLASS C STONE
	<b>CLEAN WATER BYPASS</b> PUMP THROUGH PIPE DRAIN THROUGH PIPE OR CHANNEL

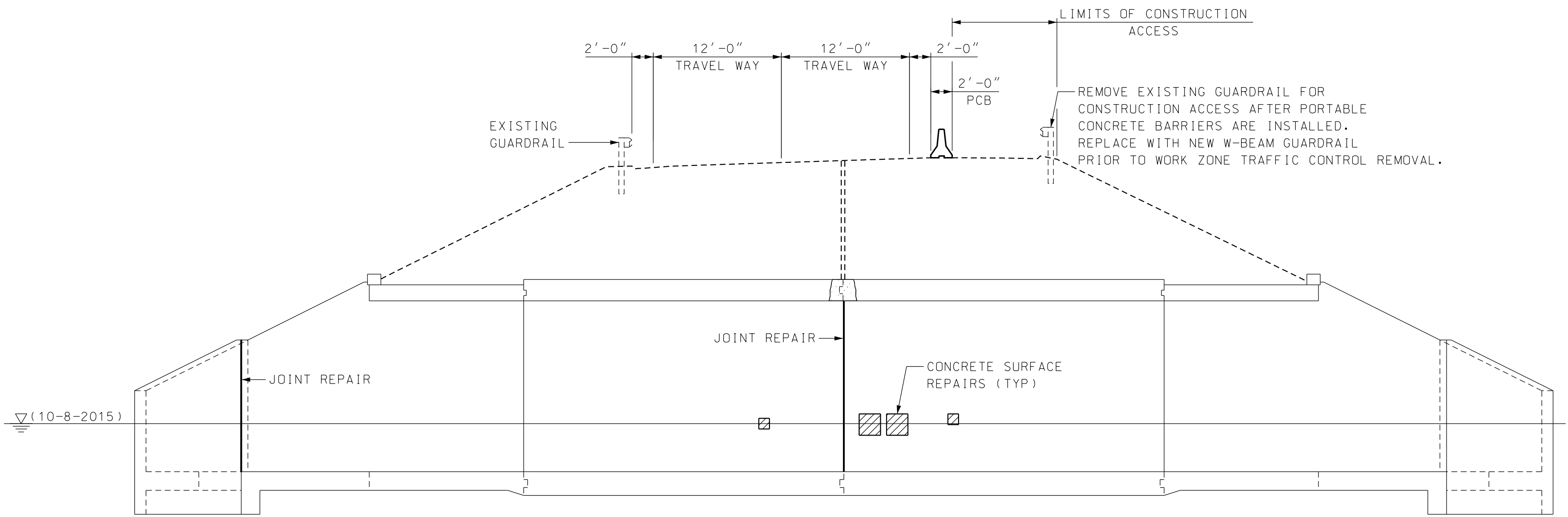


STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN						
ACCESS AND EROSION CONTROL PLANS (1 OF 3)						
DATE PLOTTED	VHB PROJECT NO.	MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6/29/2017	52380.05	---	16154nb_+cp03.dgn	16154	5	8

SDR PROCESSED		KDW	DATE		REVISIONS AFTER PROPOSAL	
			NEW DESIGN	KCD	STATION	DESCRIPTION
SHEET CHECKED		SMH	DATE	06/17		
AS BUILT DETAILS			DATE			



TEMPORARY LANE CLOSURE AND TRAFFIC SHIFT  
FOR CENTER JOINT STABILIZATION AND REPAIR  
(LOOKING NORTH)  
SCALE: 1/8" = 1'-0"



TEMPORARY TRAFFIC SHIFT  
FOR CONSTRUCTION ACCESS  
(LOOKING NORTH)  
SCALE: 1/8" = 1'-0"

I-93 NORTHBOUND BRIDGE NO. 127/099



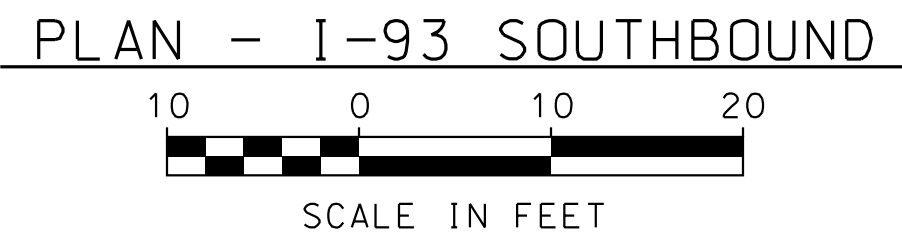
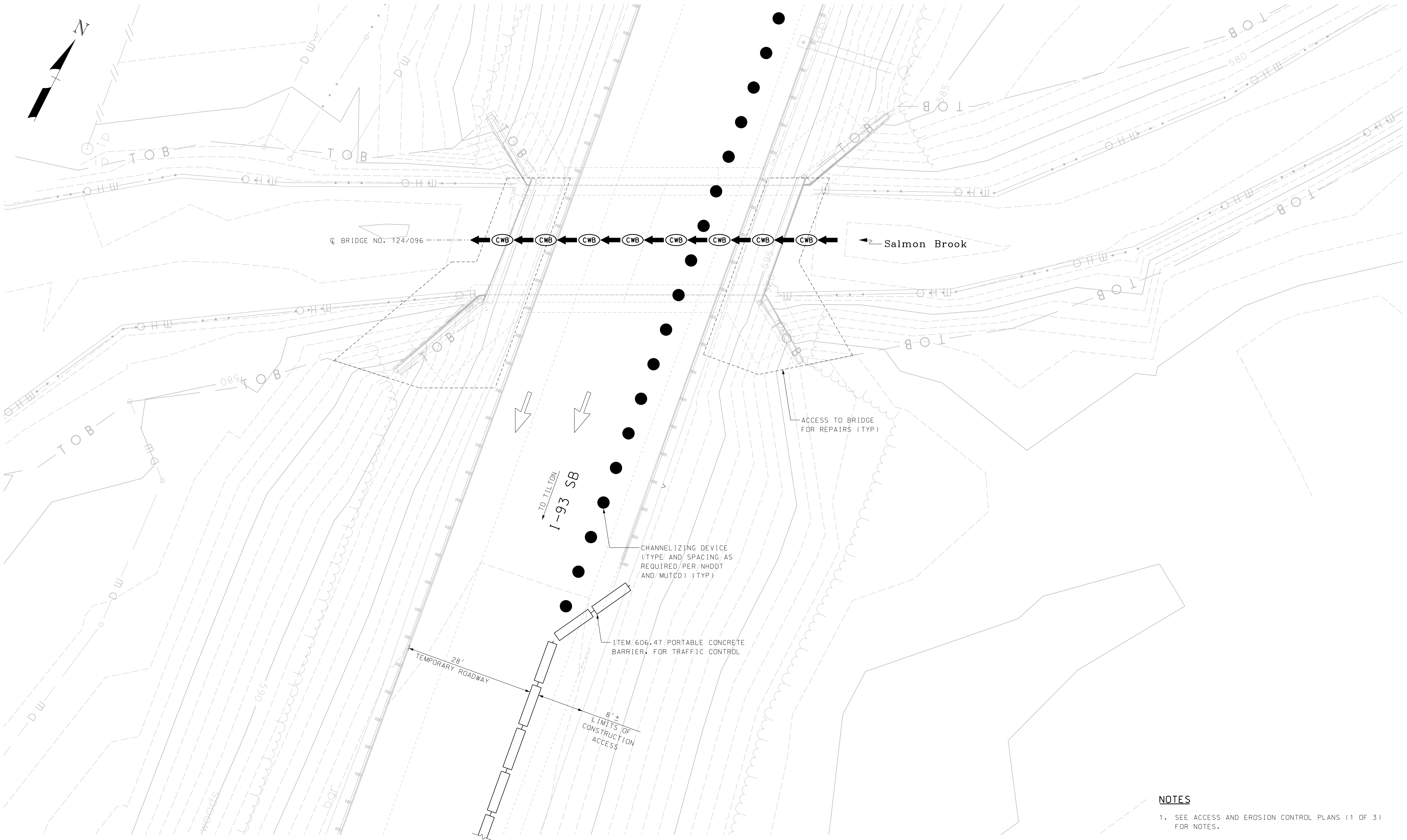
DATE PLOTTED	VHB PROJECT NO.	MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6/29/2017	52380.05	---	16154nb_al+11.phas.dgn	16154	6	8

STATE OF NEW HAMPSHIRE	
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN	
<i>ACCESS AND EROSION CONTROL PLANS (2 OF 3)</i>	



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SDR PROCESSED	KDW	REVISIONS AFTER PROPOSAL			
		NUMBER	DATE	STATION	DESCRIPTION
NEW DESIGN	KCD		DATE 06/17		
SHEET CHECKED	SMH		DATE 06/17		
AS BUILT DETAILS			DATE		



NOTES

1. SEE ACCESS AND EROSION CONTROL PLANS (1 OF 3) FOR NOTES.



DATE PLOTTED	VHB PROJECT NO.	MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6/29/2017	52380.05	---	16154sb_gp.dgn	16154	7	8

STATE OF NEW HAMPSHIRE
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ACCESS AND EROSION CONTROL PLANS (3 OF 3)